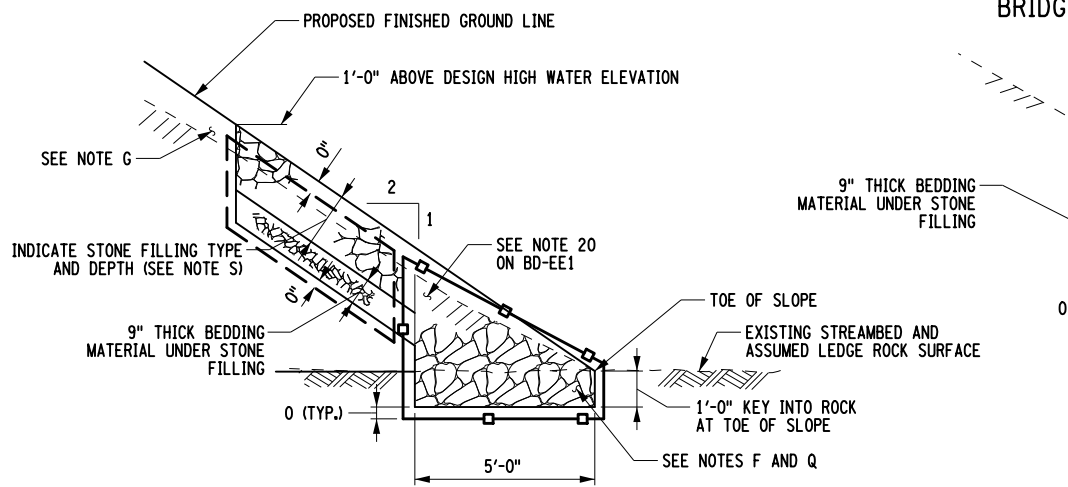


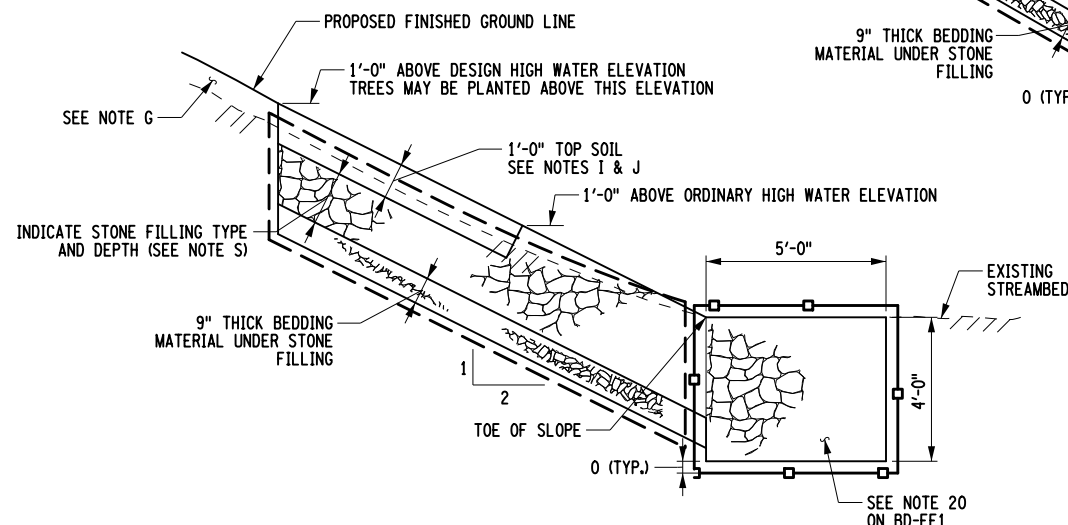
SOIL AT TOE

DESIGNER NOTES:

- STREAM BANK PROTECTION SHALL BE PLACED AT ALL STREAM CROSSINGS WHERE EXISTING EMBANKMENTS ARE CUT OR FILL IS PLACED. AS A MINIMUM THE STREAM BANK PROTECTION SHALL EXTEND FULL WIDTH OF THE ABUTMENT EMBANKMENT TO 10'-0" BEYOND THE END OF EACH WINGWALL MEASURED PERPENDICULAR TO THE STATION LINE OF THE ROADWAY, WHERE THE STREAM BANK PROTECTION IS REQUIRED BEHIND AN ABUTMENT, IT SHALL EXTEND A MINIMUM OF 10'-0" BEHIND THE WINGWALL AS MEASURED ALONG THE STATION LINE.
- COORDINATE WITH REGION OFFICE WHEN ADDITIONAL STREAM BANK PROTECTION IS BEING PLACED UNDER HIGHWAY ESTIMATE.
- TOE OF SLOPE TO BE LABELED IN PLAN VIEW.
- A STONE FILL ANCHORAGE TRENCH IS REQUIRED WHEREVER STONE FILL IS USED AS STREAM BANK PROTECTION WITH SOIL AT TOE OF SLOPE.
- THE STONE FILL ANCHORAGE TRENCH SHOULD BE MODIFIED IN SPECIAL CASES BASED ON ANTICIPATED SCOUR CONDITIONS OR ROCK BEING LOCATED AT EXISTING GROUND OR STREAMBED AT THE LOCATION. ANY MODIFICATIONS ARE SUBJECT TO APPROVAL BY THE DEPUTY CHIEF ENGINEER (STRUCTURES).
- THE FOUNDATION DESIGN REPORT WILL NOTE IF ROCK DOWELS WILL BE REQUIRED BASED ON TYPE AND CONDITION OF ROCK, SLOPE AND STREAM VELOCITY.
- ON SLOPES BENEATH SUPERSTRUCTURES, PLACE SELECT GRANULAR FILL SLOPE PROTECTION (STRUCTURAL) OR OTHER APPROVED MATERIAL FROM UPPER LIMIT OF STREAMBED PROTECTION TO FACE OF SUBSTRUCTURE.
- PARTIALLY VEGETATED STONE SLOPE PROTECTION DETAIL MAY BE USED INSTEAD OF TYPICAL STONE SLOPE PROTECTION AT THE DESIGNERS OPTION, WHERE GREATER AREA OF VEGETATED COVER IS DESIRED.
- IT IS RECOMMENDED THAT THE TOP SOIL BE REPLACED BY FINE STONE FILL BENEATH THE STRUCTURE. IN THE EVENT THAT THE DESIGNER, IN CONSULTATION WITH THE LANDSCAPE ARCHITECT, DETERMINES THAT SUFFICIENT SUNLIGHT WILL REACH THE AREA TO SUPPORT VEGETATION, THE SOIL DETAIL MAY BE RETAINED AND SHADE-TOLERANT VEGETATION USED.
- UNLESS APPROVED BY REGIONAL HYDRAULICS, ONLY NYS DOT-APPROVED VEGETATION, HAVING A STEM DIAMETER OF 1 INCH OR LESS AT FULL GROWTH, MAY BE USED FOR TOPSOIL PLANTING WHEN LOCATED WITHIN 100 FEET UPSTREAM FROM THE BRIDGE FASCIA. LARGER TREES AND SHRUBS MAY BE USED ABOVE THE UPPER LIMIT OF TOPSOIL, WHEN LOCATED FURTHER THAN 100 FEET UPSTREAM FROM THE BRIDGE FASCIA, OR AT ANY LOCATION DOWNSTREAM FROM THE BRIDGE FASCIA.
- WHEN STREAM BANK PROTECTION REQUIRES EXTRA HEAVY STONE FILL, COORDINATE DETAILS WITH THE HYDRAULICS ENGINEERING UNIT.
- REFER TO GEOTECHNICAL DESIGN PROCEDURE GDP-10b FOR STONE APRON SIZING. FOR DEVIATIONS FROM LENGTH INDICATED BY GDP-10b, BASED ON SCOUR HISTORY AND/OR SCOUR POTENTIAL, OBTAIN CONCURRENCE FROM REGIONAL HYDRAULIC ENGINEER.
- CONTACT REGIONAL HYDRAULICS ENGINEER FOR OHW, BANK FULL ELEVATION, AND CHANNEL DIMENSIONS.
- FOR DESIGNER NOTES 1-21 AND LEGEND, SEE BD-EE1.
- WHEN EXTRA HEAVY STONE FILL IS SPECIFIED FOR STREAM BANK PROTECTION, USE A KEY WIDTH OF 6'-0" AND A KEY DEPTH OF 5'-0".
- WHEN IN-STREAM WORK OR REALIGNMENT IS NECESSARY AND STONE FILLING IS PLACED WITHIN THE STREAM, THE DESIGNER SHALL CONSULT WITH THE REGIONAL ENVIRONMENTAL UNIT (OR THEIR REPRESENTATIVE) TO DETERMINE THE NEED FOR, AND DEPTH OF, NATIVE STREAMBED MATERIAL ON TOP OF THE STONE FILLING.
- AT THE "ROCK AT TOE" DETAIL IF HEAVY STONE FILL IS USED, THE STONE WILL PROJECT ABOVE THE TOE OF SLOPE DUE TO THE 1'-0" KEY INTO ROCK.
- CONTACT THE REGIONAL ENVIRONMENTAL UNIT FOR NOTES PERTAINING TO THE STONE APRON CONSTRUCTION SEQUENCE AND MATERIAL USED TO "CHOKE" THE STONE FILLING.
- STONE FILLING TYPE AND DEPTH:
2'-0" STONE FILLING (MEDIUM);
2'-6" STONE FILLING (HEAVY);
3'-0" STONE FILLING (EXTRA HEAVY, CLASS B);
4'-0" STONE FILLING (EXTRA HEAVY, CLASS A)

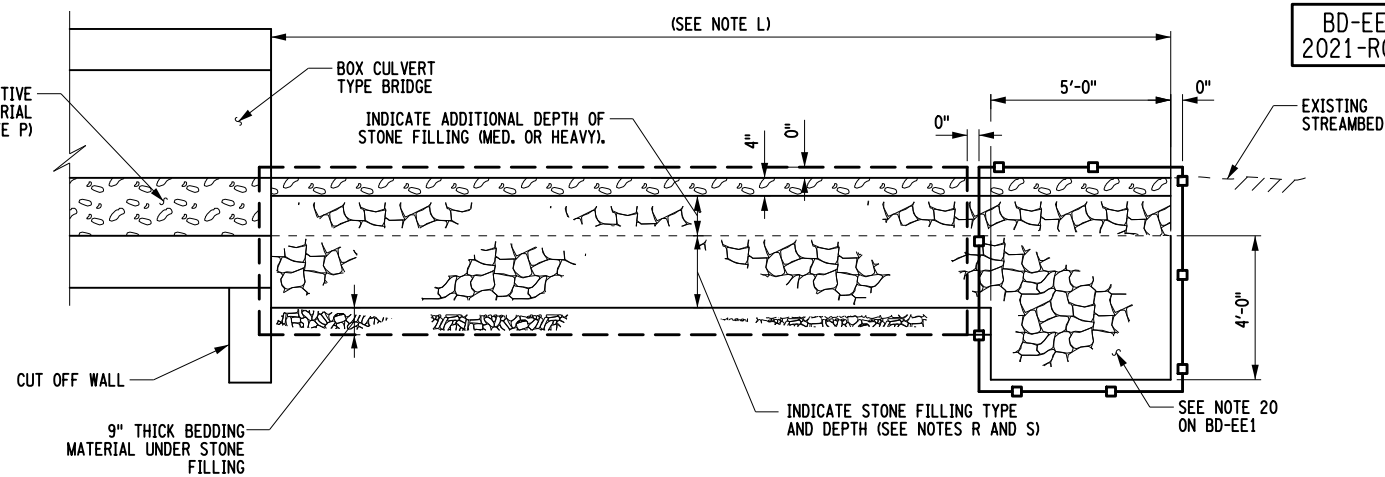


ROCK AT TOE

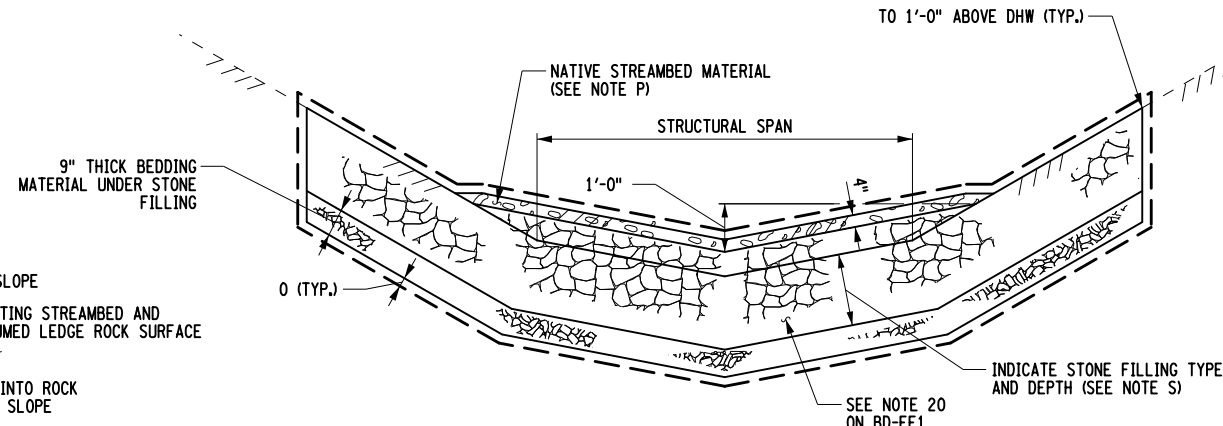


PARTIALLY VEGETATED STONE SLOPE PROTECTION (OPTIONAL)
(SOIL AT TOE SHOWN)

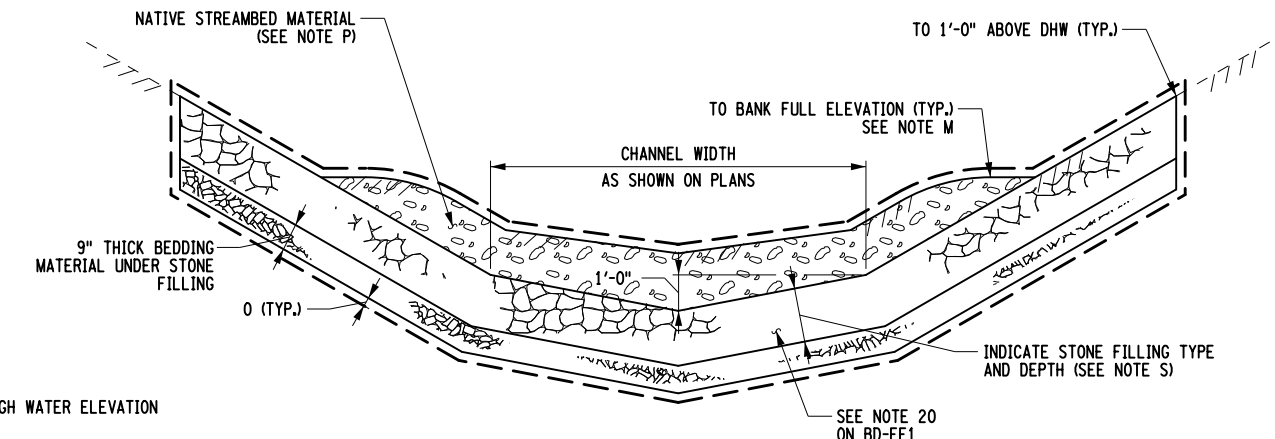
CONTRACTOR NOTE:
FOR RETENTION OF THE TOPSOIL, THE SURFACE OF THE STONE FILL MAY BE GRADED OFF WITH FINE STONE, SELECT GRANULAR FILL, SUITABLE EXCAVATED MATERIAL (AS DEFINED BY NYS STANDARD SPECIFICATION SECTION 203), OR SUFFICIENT TOPSOIL MAY BE PLACED TO "CHOKE" THE STONE BELOW THE 1 FOOT THICKNESS SHOWN. RETENTION MATERIAL INCLUDED IN TOPSOIL ITEM.



BRIDGES & CULVERTS WITH CUT OFF WALL PROTECTION


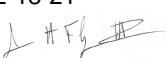


STONE APRON AT STRUCTURE OUTLET



STREAM REALIGNMENT OR
RECONSTRUCTION WITH NATIVE STREAMBED MATERIAL

NOTE:
A LOW-FLOW CHANNEL SHALL BE ESTABLISHED AT ALL LOCATIONS. THE NATIVE STREAMBED MATERIAL AND LOW-FLOW CHANNEL SHALL MATCH THE EXISTING STREAMBED CROSS SECTION WITHIN THE LIMITS OF WORK.

REVISED	 NEW YORK STATE OF OPPORTUNITY.	Department of Transportation Office of Structures
ERRATA	STREAM BANK PROTECTION DETAILS	
APPROVED: 2-18-21		ORIGINAL ISSUED UNDER EB 21-007
DEPUTY CHIEF ENGINEER (STRUCTURES)		CURRENT ISSUED UNDER EB 21-007 EFFECTIVE WITH THE LETTING OF 09/01/2021